

### **REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed May 14, 2009. Through this response, claims 1, 5, 18, 43, and 46 have been amended, claims 13-16 and 48-50 have been canceled without prejudice, waiver, or disclaimer, and claims 56-61 and 62-68 have been newly added, where no new matter has been added. Support for the new claims and claim amendments, consistent with the scope of the present claims, may be found at least on pages 6, 8, 12-14, 16, and 22-23. Reconsideration and allowance of the application and pending claims 1-2, 5-9, 12, 17-19, 21-25, 41-47, and 51-68 are respectfully requested.

#### **I. Claim Objections**

Claims 18 and 46 have been objected to due to various informalities. Applicants have amended claims 18 and 46 as set forth above, and believe these amendments to render the objection moot. Accordingly, Applicants respectfully request that the objection be withdrawn.

#### **II. Claim Rejections - 35 U.S.C. § 112(2)**

Claims 5 and 43 have been rejected under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph as indefinite for allegedly "failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." (see Office Action, page 3). Applicants appreciate the Examiner's suggested corrections, and have amended claims 5 and 43 consistent with those suggestions, and believe these amendments to render the rejection moot. Accordingly, Applicants respectfully request rejection be withdrawn.

### **III. Claim Rejections - 35 U.S.C. § 103(a)**

#### **A. Statement of the Rejections**

1. Claims 1, 2, 5, 7, 12, 13, 15, 16, 19, 21, 23, 24, 41-44, 47-49, 60, 53, and 54 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *O'Donnel* (U.S. Patent Publication No. 2002/0071663) in view of *Delpuch* (U.S. Patent Publication No. 2004/0055020).

2. Claims 8 and 45 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *O'Donnel* in view of *Delpuch* and further in view of *Kaneko* (U.S. Patent No. 6,671,454).

3. Claims 9, 17, 18, 25, 46, 51, and 52 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *O'Donnel* in view of *Delpuch* and further in view of *Masakura et al.* ("*Masakura*," U.S. Patent Publication No. 2003/0001964).

4. Claims 22 and 55 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *O'Donnel* in view of *Delpuch* and further in view of *Kaars* (U.S. Patent Publication No. 2003/0066084).

For at least the reasons explained below, Applicants respectfully traverse these rejections to the extent not rendered moot by amendment.

#### **B. Discussion of the Rejection**

The U.S. Patent and Trademark Office ("USPTO") has the burden under section 103 to establish a *prima facie* case of obviousness according to the factual inquiries expressed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). The four factual inquiries, also expressed in MPEP 2100-116, are as follows:

(A) Determining the scope and contents of the prior art;

- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

For a proper rejection of the claim under 35 U.S.C. §103, the cited combination of references must disclose, teach, or suggest all elements / features of the claim at issue. See, e.g., *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988) and *In re Keller*, 208 U.S.P.Q.2d. 871, 881 (C.C.P.A. 1981).

Applicants respectfully submit that a *prima facie* case of obviousness is not established using the cited art of record.

1. Claims 1, 2, 5, 7, 12, 13, 15, 16, 19, 21, 23, 24, 41-44, 47-49, 60, 53, and 54 - 35 - U.S.C. § 103(a) - O'Donnel in view of Delpuch

**A. Independent Claim 1**

Claim 1 recites (with emphasis added):

1. A method comprising the steps of:  
***receiving plural video streams corresponding to a first format and a second format different than the first format;***  
***encoding in parallel plural digitized pictures of a first picture sequence corresponding to a first video stream of the plural received video streams and a second picture sequence corresponding to a second video stream of the plural received video streams to produce a transport stream comprising a multiplex of a corresponding first compressed video stream and a second video stream, respectively, the first and second video streams having the first format and the first and second compressed video streams having the second format;***  
storing the transport stream in a storage device;  
determining whether the encoded pictures of the first and second compressed video streams are to be transcoded according to a first operating mode or a second operating mode relative to producing the video stream, the determination based on availability of processing resources, wherein the first operating mode is implemented in non-real time and the second operating mode is implemented in real-time; and  
transcoding at least a portion of the first compressed video stream or the second compressed video stream according to either the first

operating mode or the second operating mode responsive to a determination regarding the sufficiency of processing resources.

Applicants respectfully submit that the rejection has been rendered moot by amendment. In addition, Applicants respectfully submit that *O'Donnel* in view of *Delpuch* fails to disclose, teach, or suggest at least the above-emphasized features of claim 1. For instance, *O'Donnel* fails to disclose at least ***receiving plural video streams corresponding to a first format and a second format different than the first format or encoding in parallel plural digitized pictures of a first picture sequence corresponding to a first video stream of the plural received video streams and a second picture sequence.*** *Delpuch* fails to remedy this deficiency. For at least these reasons, Applicants respectfully submit that claim 1 is allowable over *O'Donnel* in view of *Delpuch* and respectfully request that the rejection be withdrawn and claim 1, as amended, allowed.

Because independent claim 1 is allowable over *O'Donnel* in view of *Delpuch*, dependent claims 2, 5, 7, 12, 19, and 21 are allowable as a matter of law for at least the reason that the dependent claims 2, 5, 7, 12, 19, and 21 contain all elements of their respective base claim. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

In addition, Applicants respectfully submit that one or more of the dependent claims are allowable on separate grounds. For instance, with regard to claim 5, Applicants respectfully submit that *O'Donnel* in view of *Delpuch* fails to disclose, teach, or suggest at least “***accessing pre-calculated resource estimates*** corresponding to ***compressing, decompressing, or a combination of both*** tasks pertaining to transcoding operations corresponding to the stored video stream, the pre-calculated resource estimates based on worst case conditions for one or more factors,” as recited in claim 5. The non-final Office Action (page 7) refers to paragraphs [0035] and [0037] of *Delpuch* for alleged

teaching of these features, those paragraphs of *Delpuch* reproduced below (emphasis added):

[0035] Turning now to FIG. 6, one embodiment of a method corresponding to the above description is provided. Generally speaking, the processes described in FIG. 6 may occur within a viewer's STB, PVR, or related receiving device. In response to detecting an indication to record a particular television program or other data (decision block 602), a determination may be made as to the amount of storage required to accommodate storage of the program (block 604). It is noted that detection (block 602) of an indication to record a program may be in response to an explicit request received from a viewer, a pre-programmed request to record shows of a given type, or an automatic indication that may occur in response to detecting a program the viewer may wish to record based on the viewer's viewing habits, demographics, etc.

[0037] Subsequent to determining the storage requirements (block 604), a determination may be made (decision block 606) as to a particular data reduction factor DRF (i.e., level of compression) desired. Such an indication may be made explicitly by the viewer (e.g., quality level highest, compression level greatest, etc.) or could be automatically determined based on factors such as the amount of storage space available, the type of program indicated, or otherwise. Alternatively, a default compression level may be utilized if no DRF indication is detected (decision block 606). Subsequent to determining the desired level of compression and corresponding storage space required, a determination is made (decision block 608) as to whether there is sufficient storage space available for the proposed recording. If there is sufficient space (decision block 608), then the program may be subsequently compressed (block 612) using the desired DRF and stored (block 614). It is noted that the desired compression which is indicated may be no compression, in which case compression processing at block 612 is simply bypassed.

Applicants respectfully submit that none of these sections disclose ***accessing pre-calculated resource estimates***, and in particular, certainly not for ***compressing, decompressing, or a combination of both*** or for worst case conditions. Even assuming *arguendo* that the storage space calculations are done prior to the actual recording, there is no actual disclose of an ***access*** to such calculations or determinations at the time of recording. Further, the above-reproduced sections of *Delpuch* reveal calculations pertaining to storage, not resource estimates corresponding to

compression and/or decompression. For at least these reasons, Applicants respectfully request that the rejection to claim 5 be withdrawn.

As another example, with reference is claim 19, Applicants respectfully submit that *O'Donnel* in view of *Delpuch* fails to disclose, teach, or suggest at least “**monitoring consumption of the processing resources over an extended time period for different time intervals for respective operations**” that are currently executing and scheduled to be executed at a future time.” The non-final Office Action (page 10) refers to paragraph [0021] of *O'Donnel*, which provides as follows (emphasis added):

[0021] When the CVA 2 again resumes on-line operation--either because of user input or automatic initiation--the CVA 2 makes a record of it's status and then suspends off-line processing. During the next off-line period, the CVA 2 may either resume the suspended process or initiate a new process. This latter course of action would be appropriate if, for example, during the interim on-line period, the user had discarded the particular video stream upon which the suspended operation was being performed. Thus, off-line processing does not interfere with either recording or playback, and does not raise the peak throughput needed in the system, but rather consumes system resources only when the CVA 2 would otherwise be idle.

Applicants respectfully submit that this section fails to disclose anything about **monitoring consumption of the processing resources over an extended time period for different time intervals for respective operations**, and certainly the mere disclosure that the CVA makes a record of its status is not enough to support the particular and explicit claim limitations recited in claim 19. For at least these reasons, Applicants respectfully request that the rejection to claim 19 be withdrawn.

#### **B. Independent Claim 23**

Claim 23 recites (with emphasis added):

23. A set-top terminal (STT) comprising:  
***an encoder configured to compress plural digitized pictures of a picture sequence according to a first video compression specification to produce a video stream;***

determine logic configured to determine whether the video stream is to be transcoded according to a first operating mode or a second operating mode relative to producing the video stream, the determination based on availability of processing resources; and  
transcode logic configured to transcode the video stream according to either the first operating mode or the second operating mode responsive to a determination regarding the sufficiency of processing resources.

Applicants respectfully submit that *O'Donnel* in view of *Delpuch* fails to disclose, teach, or suggest at least the above-emphasized features of claim 23. The non-final Office Action (page 11) acknowledges that *O'Donnel* "fails to explicitly disclose an encoder configured to compress....video stream," but incorrectly equates the encoder of a headend in *Delpuch* to that of one residing at a set-top terminal. It is noted claim 23 recites a set-top terminal with the above-emphasized features, not a headend. Since neither *O'Donnel* nor *Delpuch* disclose a set-top terminal with an encoder with the recited features, Applicants respectfully submit that a *prima facie* rejection has not been established, and hence respectfully requests that the rejection be withdrawn and claim 23 allowed.

Further, it is noted that *O'Donnel* fails to disclose the features corresponding to first and second operating modes. The off-line and real-time features do not both pertain to transcoding, since real-time (when the signal is first received) does not involve a **transcode** operation in *O'Donnel*.

Because independent claim 23 is allowable over *O'Donnel* in view of *Delpuch*, dependent claims 24, 41-44, 47, 53 and 54 are allowable as a matter of law.

Additionally, for similar reasons presented above for claims 5 and 19, claims 43 and 53 are allowable over *O'Donnel* in view of *Delpuch* on separate grounds.

2. Claims 8 and 45 - 35 U.S.C. § 103(a) - *O'Donnel* in view of *Delpuch* and further in view of *Kaneko*

As set forth above, *O'Donnel* in view of *Delpuch* fails to disclose the features emphasized above for amended independent claim 1. *Kaneko* fails to remedy these deficiencies. For at least the reason that *O'Donnel* in view of *Delpuch* and further in view of *Kaneko* fails to disclose the features of claim 1, claim 8 is allowable as a matter of law.

Additionally, Applicants respectfully submit that *Kaneko* fails to disclose at least “wherein the time factor provides a ***plurality of completion times*** for non-real time operations.” The non-final Office Action (page 13) refers to col. 14, lines 59-67, col. 15, lines 1-29, and Figure 16 of *Kaneko*, and alleges that “transcoding operations are scheduled in consideration of free time periods where the transcoding completion period is chosen based on whether the process can be completed before the receiver becomes active again.” Applicants respectfully disagree. The cited sections of col. 14 and col. 15 are reproduced below (emphasis added):

Additionally, the timing of performing re-compression may be scheduled at a time at which no program is preset. FIG. 15 is a block diagram showing a configuration of a record/playback control apparatus for adjusting schedules of re-compression on the basis of program presetting information. The configuration in FIG. 15 is obtained by adding program presetting information storage unit 156 to the configuration shown in FIG. 11. Re-compression control unit 154, upon detecting that a free space in storage device 155 becomes equal to or smaller than a specified value, acquires program presetting information from program presetting information storage unit 156. The recording/playback presetting storage unit in the record/playback control apparatus shown in FIGS. 7 and 9 may be used as program presetting information storage unit 156.

FIG. 16 shows an example of program presetting information in which recordings are preset in time periods from 17:00 to 18:00 and from 21:00 to 23:00. Re-compression control unit 154, upon receiving such information, determines that the time periods before 17:00, from 18:00 to 21:00 and after 23:00 are free, thereby making it possible to adjust schedules such that re-compressing is completed within the free time periods. For example, if the time required for re-compression is the same as that for playing back a content, the playback time of a content of



interest is checked and re-compression is scheduled in the earliest possible time period in consideration of free time periods.

FIG. 17 is a block diagram showing a configuration of a record/playback control apparatus for automatically selecting a content for re-compression. The apparatus has a configuration obtained by adding content selecting unit 157 for selecting a content to be re-compressed to the configuration shown in FIG. 11. Re-compression control unit 154 issues a direction for re-compression to content selecting unit 157 and re-compressing unit 152. Content selecting unit 157 selects a content in accordance with a content selecting criterion stored therein and indicates the content to be read to content reading unit 151. Components other than that are identical to those of the apparatus shown in FIG. 11.

Applicants respectfully disagree with the characterization of these sections set forth in the non-final Office Action. Applicants believe that it appears, from the above sections, that a single re-compression is scheduled to take place over several intervals until complete, those intervals separated in time by presetting intervals. Hence, the actual re-compression is not complete until the final schedule for recompression is completed, and hence *Kaneko* does not disclose or teach that these sections disclose, teach, or suggest a **plurality of completion times**, but rather, only one. For at least these reasons, Applicants respectfully request that the rejection to claims 8 and 45 be withdrawn and the claims allowed.

3. Claims 9, 17, 18, 25, 46, 51, and 52 - 35 U.S.C. § 103(a) - *O'Donnel* in view of *Delpuch* and further in view of *Masakura*

As set forth above, *O'Donnel* in view of *Delpuch* fails to disclose the features emphasized above for amended independent claim 1. *Masakura* fails to remedy these deficiencies. For at least the reason that *O'Donnel* in view of *Delpuch* and further in view of *Masakura* fails to disclose the features of claim 1, claims 9, 17, and 18 are allowable as a matter of law.

In addition, with regard to claims 9, 17, 18, 25, 46, 51, and 52, Applicants respectfully submit that the combination of *Masakura* with *O'Donnel* in view of *Delpuch* is not obvious. For instance, with regard to claims 9 and 46 and addressing the deficiencies of *O'Donnel* in view of *Delpuch* with regard to different video specifications, the non-final Office Action alleges (page 15):

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *O'Donnel* and *Delpuch* by specifically providing the elements mentioned above, as taught by *Masakura*, for the purpose of converting video from one format to another, allowing more compression and in consequence administrating storage space more effectively.

Applicants respectfully disagree. *O'Donnel* and *Delpuch* are primarily concerned with increasing the effective capacity of local storage (e.g., see paragraph [0007] in *O'Donnel* and paragraph [0011] of *Delpuch*). *Delpuch* additionally seeks to additionally improve the user's control of quality over what is stored there (see, e.g., paragraph [0011]). Both references rely on "re-compression," and not transcoding based on different formats (e.g., standards/specifications). Indeed, there is not even a suggestion in *O'Donnel* and *Delpuch* of implementing different formats for transcoding (e.g., MPEG-2, H.264). Addressing the rationale reproduced above, it is noted that *O'Donnel* emphasizes (see, e.g., paragraph [0007]) the desire by consumers for low cost devices as well as the unlikelihood of significant low computational capacity, hence it does not appear consistent with the contention that it is obvious to add the more sophisticated, format-converting compression technology allegedly taught in *Masakura* to *O'Donnel* and *Delpuch*, nor is it reasonable to allege so.

Further, *Masakura*, on the other hand, is focused on providing content to plural devices requiring different formats (paragraph [0008]). Indeed, *Masakura* appears to teach away from re-compression (re-encoding, as set forth in paragraphs [0009] – [0012]), and

hence its inclusion in the proposed combination appears to be at odds with Federal case law, cited below (emphasis in original):

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)

However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed.." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)

For at least these reasons, Applicants respectfully submit that a *prima facie* case of obviousness is not established using *Masakura* in combination with *O'Donnel* and *Delpuch*, and hence respectfully request that the rejection to claims 9 and 46 be withdrawn.

Since claims 17, 18, 25, 51, and 52 all appear to rely on a similar rationale (see pages 15-17 of the non-final Office Action), for at least the reasons set forth above for allowability of claims 9 and 46, Applicants respectfully submit that claims 17, 18, 25, 51, and 52 are allowable and hence respectfully request that the rejection be withdrawn.

4. Claims 22 and 55 - 35 U.S.C. § 103(a) - *O'Donnel* in view of *Delpuch* and further in view of *Kaars*

As set forth above, *O'Donnel* in view of *Delpuch* fails to disclose the features emphasized above for amended independent claim 1. *Kaars* fails to remedy these deficiencies. For at least the reason that *O'Donnel* in view of *Delpuch* and further in view of *Kaars* fails to disclose the features of claim 1, claim 22 is allowable as a matter of law.

In addition, with regard to claims 22 and 55, Applicants respectfully submit that the combination of *Kaars* with *O'Donnel* in view of *Delpuch* is not obvious. For instance, and

addressing the deficiencies of *O'Donnel* in view of *Delpuch* with regard to transcoding based on one or more characteristics of the video stream, the non-final Office Action alleges (page 18):

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *O'Donnel* and *Delpuch* by specifically providing the elements mentioned above, as taught by *Kaars*, for the purpose of allowing the receiver to be able to receive and support different types of signal inputs, regulating its operation based on said input signal.

Applicants respectfully disagree. *O'Donnel* and *Delpuch* are primarily concerned with increasing the effective capacity of local storage (e.g., see paragraph [0007] in *O'Donnel* and paragraph [0011] of *Delpuch*). *Delpuch* additionally seeks to additionally improve the user's control of quality over what is stored there (see, e.g., paragraph [0011]). Both references rely on "re-compression," and not transcoding based on different formats (e.g., standards/specifications). Indeed, there is not even a suggestion in *O'Donnel* and *Delpuch* of implementing different formats for transcoding (e.g., MPEG-2, H.264). Addressing the rationale reproduced above, it is noted that *O'Donnel* emphasizes (see, e.g., paragraph [0007]) the desire by consumers for low cost devices as well as the unlikelihood of significant low computational capacity, hence it does not appear consistent with the contention that it is obvious to add more sophistication (e.g., at likely an increased cost) allegedly taught in *Kaars* to *O'Donnel* and *Delpuch*, nor is it reasonable to allege so. *Kaars*, on the other hand, is focused on storing "various transcoding algorithms for a variety of playback devices and transfer networks" (see Abstract). Although *Kaars* references "re-encoding" (see, e.g., paragraph [0020]), the context suggests that traditional re-encoding is not the intent since a format suitable for transmission to a mobile format follows that term. In view of the disparity in systems and approaches among *O'Donnel* and *Delpuch* and *Kaars*, Applicants respectfully submit that it is not obvious to combine these references and respectfully request that the rejection be withdrawn and claims 22 and 55 allowed.

#### **IV. Canceled Claims**

As identified above, claims 13-16 and 48-50 have been canceled from the application through this Response without prejudice, waiver, or disclaimer. Applicants reserve the right to present these canceled claims, or variants thereof, in continuing applications to be filed subsequently.

#### **V. New Claims**

As identified above, claims 56-61 and 62-68 have been added into the application through this response. Applicants respectfully submit that the art of record fails to disclose, teach, or suggest at least “accessing in parallel the first and second compressed video streams, decompressing in parallel the encoded pictures of the first and second compressed video streams, and compressing the first compressed video stream according to the second format at a reduced bit rate and compressing the second compressed video stream according to a third format different than the first and second formats,” as disclosed in claims 56 and 57 (latter by incorporation), “wherein transcoding comprises accessing the portion of the first compressed video stream, decompressing the portion, and compressing the decompressed portion according to a third format different than the first and second formats, and storing the transcoded portion having the third format in the storage device,” as disclosed in claims 58-60 (59 and 60 incorporating the features of claim 58), “wherein encoding further comprising encoding audio corresponding respectively to the first and second video streams and multiplexing the encoded audio in the transport stream,” as recited in claim 61, “receive, in parallel to the plural digitized pictures, second plural digitized pictures of a second picture sequence and compressed pictures, the received pictures corresponding to a first format; and further compress, in parallel to the plural digitized pictures of the picture sequence, the

second plural digitized pictures of the second picture sequence to produce, in association with the multiplexer, a transport stream comprising a multiplex of the video stream and the compressed second plural digitized pictures, the transport stream pictures corresponding to a second format different than the first,” as recited in claim 62, “wherein the transcode logic is further configured to access in parallel the video streams of the transport stream, decompress in parallel the compressed pictures of the video stream and the compressed second plural digitized pictures, and compress the decompressed pictures of the video stream according to the second format at a reduced bit rate and compress the decompressed second plural digitized pictures according to a third format different than the first and second formats,” as disclosed in claims 63 and 64 (64 by dependency), “wherein the transcode logic is further configured to access a portion of the video stream, decompress the portion, compress the decompressed portion according to a third format different than the first and second formats, and store the transcoded portion having the third format in a storage device,” as disclosed in claims 65-67 (incorporated in 66 and 67), and “wherein the encoder is further configured to compress audio corresponding respectively to the video streams of the transport stream, and wherein the multiplexer is configured to multiplex the compressed audio in the transport stream,” as recited in claim 68. Since these new claims describe embodiments of an invention novel and unobvious in view of the art of record, Applicants respectfully request that these claims be held to be allowable.

### **CONCLUSION**

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, and similarly interpreted statements, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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